REMARKS

Claims 1-6 and 10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sherrington in view of Barretto. Sherrington is primarily directed to a bed of porous polymeric particles which retain gel in the pores of the particles for purposes of peptide synthesis. There is only a single sentence in Sherrington (Col. 2, lines 65-68) that refer to the possibility that the porous material could be in a monolithic block form and that the gel could be formed *in situ* following permeation into the interconnecting pores of the block. There is no suggestion how this could be accomplished or the advantages of using such a gel in a monolithic block.

Barretto discloses a bed of synthetic resin support particles which are layered with fine latex particles. There is no suggestion in either Sherrington or Barretto of using the latex particles to bond to the interconnecting pores of a monolith.

The problems of forming a gel *in situ* in the microscopic pores of a monolith would not be trivial. Sherrington provides no disclosure of how this would be accomplished. For example, Sherrington does not disclose how one could flow a gel-forming solution through to the microscopic pores and thereafter cause the gel to form *in situ*. Thus, it is submitted that Sherrington is not a valid reference under 35 U.S.C. § 112 because there is insufficient disclosure to enable a person of ordinary skill to make a monolith in which the gel is formed *in situ* in the pores of the monolith.

One problem with a packed bed of support particles coated with latex particles is the back pressure at high flow rates to the pressure limitations of the column. See paragraphs 12-14 of the present specification. This problem is solved in the present invention by the use of a monolith with the microscopic particles irreversibly bound to the walls of the monolith. The analyte solution flows through the lumen formed on the interior of the particle-coated pore walls. In contrast, even if the use of a gel in the pores of a monolith vaguely suggested by Sherrington were considered to be an operative disclosure, such a composition would create significant backpressure because there is no open area for solution to flow; instead, the solution must flow through the gel creating high backpressure.

As further illustrated in paragraph 14, better mass transport properties of the monolithic phase over conventional resin based phases lead to improved separations. Due to the lower pressure drop, steeper flow gradients are possible with the monolithic phase. It is also possible to use longer columns to increase resolution. This is neither disclosed nor suggested by Sherrington or Barretto.

However, monolithic columns come with the disadvantage that they require strict control of conditions during manufacture would obtain uniform separation capacity on the walls of the pores in the monolith. This limitation makes scaleup difficult. See paragraph 14 of this application.

As set forth in the specification, the scaleup problem is overcome by the use of a uniform coating of the layering particles on the walls of the pores. This provides uniform material for separation leading to improved scaleup. Sherrington does not solve this problem in that scaleup because of the difficulty by the required *in situ* formation of the gel in the pores of the monolith.

Applicant has provided an elegant solution to address the scaleup of monolithic phases by permitting the formation of a layer fine polymeric layering particles attached to the polymer walls. This structure is neither disclosed nor suggestion by the prior art, alone or in combination. Further, there is no suggestion in Sherrington or Barretto to make the combination proposed in the office action. Thus, it is submitted that the prior art is not combinable.

Claim 3 is rejected under 35 U.S.C. § 103 as being unpatentable over Sherrington in view of Barretto and further in view of Pohl. It is submitted that Claim 3 distinguishes over the prior art for the reasons set forth above.

In view of the foregoing, it is submitted that the present claims are in condition for allowance. Favorable action is solicited.

Please direct any calls in connection with this application to the undersigned at (415) 781-1989.

Applicants believe no fees are due. However, the Commissioner is authorized to charge fees which may be required, including extension fees, or credit any overpayment, to Deposit Account No. 50-2319 (Our Order No.: 465377-01102; Our Docket No.: 33568/US).

Respectfully submitted,
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